FOX RIVER CURRENT

January/February 2001 Vol. 4, No. 1 Update from the Lower Fox River Intergovernmental Partnership

EPA, DNR Oversee Successful SMU 56/57 Dredging Project

By Susan Pastor, U.S. Environmental Protection Agency

Under U.S. Environmental Protection Agency (EPA) and Wisconsin Department of Natural Resources (DNR) oversight, Fort James Corporation successfully completed dredging at Sediment Management Unit (SMU) 56/57 about two weeks ahead of schedule.

Fort James' contractor removed nearly 50,000 cubic yards of polychlorinated biphenyl (PCB)-contaminated sediment from a section of the Lower Fox River adjacent to Fort James' West Mill in Green Bay. During the course of the project, which ran from August 23 to October 31, 2000, an average of 723 cubic yards per day was removed. The highest daily production rate occurred on October 20 when it reached 1,599 cubic yards. The highest weekly production rate was 1,265 cubic yards a day, which happened from October 15 to 21.

According to EPA On-Scene Coordinator Sam Borries, to be successful, dredging was done 24 hours per day, seven days a week. Although such an aggressive schedule is atypical for most projects, it was required in this case. "We had to do it to meet the deadline," he explained. "It was necessary if we wanted to finish the project this year."

The dredging operation included a 2,400 gallon-per-minute treatment system and a sediment de-watering structure set up to "squeeze" contaminated water from the sediment. All de-watered sediment was disposed of at the Fort James Landfill near Green Bay. All treated water was discharged back into the Fox River. Fort James' contractor placed an average of 9 to12 inches of sand over all four sections of the dredged area to cover any exposed PCBs left in surface sediment and side slopes along the edges and to clearly delineate the dredged area, Borries said. "It worked out well because they were only supposed to do six inches, on average," he continued.

Borries, who was assigned to SMU 56/57 because of his experience with PCB cleanups, said, for the most part, the project ran smoothly. "Everyone was committed and motivated to get the work done," he stated. "For example, Fort James and the contractor were willing to bring in the right kind of back-up equipment to minimize down time in case of an equipment failure."

In May, Fort James, EPA, and DNR signed a federal legal document, called a consent order, in which the company agreed to remove the contaminated sediment. The order required the project to begin by late August and to finish by late November. However, because the contractor worked under the more aggressive schedule, the project was started and completed early. Borries concluded, "It took only 69 days for the 50,000 yards of sediment to come out from startup to finish."

Natural Resources Damage Settlement Reached with Fort James Corporation

By Greg Swanson, Wisconsin Department of Natural Resources

The Wisconsin Department of Natural Resources (DNR), the Wisconsin Department of Justice (DOJ) and Fort James Corporation signed a natural resources damage (NRD) compensatory restoration settlement agreement on Wednesday, November 15, 2000 at a press conference in Green Bay.

According to DNR Secretary George Meyer, "This agreement provides for compensatory restoration projects that are doable, practical, and lead to measurable

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In response to reader requests, the Fox River Current will regularly feature articles on the technologies used to address contaminated sediment.

Technical Corner . . . SMU 56/57 by the Numbers

By Rich Trotto, Wisconsin Department of Natural Resources

Numbers tell the story in any cleanup project, and this is certainly the case in Sediment Management Unit (SMU) 56/57 on the Lower Fox River. It is the numbers that give meaning to the dredging in the river, the slurry moving through the pipeline, the sediment hauled to the landfill, and the clean water flowing back into the river. By all accounts, the preliminary numbers, or data cited in this article, which could be revised slightly when the final report is issued, show that the project was a success.

Dried sediment is loaded into a dump truck for transportation to the Fort James Corporation landfill near the Austin Straubel International Airport in Green Bay. Over 52,000 tons of contaminated sediment was transported during the operation.

Perhaps the most significant number is 2.2 parts per million (ppm). That is the average concentration of polychlorinated biphenyls (PCBs) remaining in the top four inches of sediment in the project area. The agreement among Fort James Corporation, the Wisconsin Department of Natural Resources (DNR), and the U.S. Environmental Protection Agency (EPA) requires the surface concentrations to be no higher than 10 ppm for the company to be released from further liability in the dredged areas. A closer look at the surface concentration numbers show just how successful the cleanup was. Confirmation samples ranged from "no detect" to 9.5 ppm. However, 11 out of 28 samples (about 40 percent) were less than 1 ppm and 24 of the 28 samples (86 percent) were below 4 ppm.

56/57 by the Numbers (As of November 7, 2000)	
Average concentration of PCBs in surface sediment	**2.2 ppm**
Average cubic yards (CYs) removed per day	**723 CYs**
Contaminated sediment removed from river	**49,911 CYs**
Treated water returned to river	**66.3 million gallons**
Dewatered sediment transported to landfill	**52,000 tons/ 41,000CYs**
Truckloads of sediment transported to landfill	**2,412**

According to the agreement, Fort James was required to lay at least a 6-inch layer of sand over any areas with surface concentrations greater than 1 ppm. The company decided, however, to cover the entire area to further reduce exposure to the surface concentration and to make it easier to determine exactly which areas were dredged. The sand covering on

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most of the 6½ acre dredged area ranged from 9 to 12 inches and was even deeper in some sections.

Between August 23, and October 31, 2000, 50,000 cubic yards (CYs) of contaminated sediment were removed from the river, as called for in the agreement - - an average of 723 CYs per day. Combined with the work performed at the site in 1999, a total of 80,000 CYs of contaminated sediment have been removed from what is believed to be the worst "hot spot" on the river, according to DNR Wastewater Engineer Gary Kincaid, who represented the DNR on the project.

"The project was a great success," said Kincaid. "It met all of our objectives, and was completed ahead of schedule, and with no particular problems."

The dredged slurry was piped to an onshore dewatering operation at a site adjacent to the Fort James mill. There, the sediment was separated from the water and trucked off to a waste disposal landfill, owned and operated by Fort James near Austin Straubel International Airport. A total of over 52,000 tons, or 2,400 truckloads, of dewatered sediment were transported to the landfill during the project.

At the time dredging was completed, approximately 66 million gallons of treated wastewater were returned to the river. The returning water (effluent flow) was filtered through a series of sand, cloth, and carbon filters before entering the river. The treated effluent flow showed no detectable solids and no detectable levels of PCB contamination, according to Kincaid.

The contractor, Sevenson Environmental Services, Inc. of Niagara, New York, began demobilization from the site on November 1. After decontamination and demobilization activities, all the used silt curtain, filter sand and carbon and bag filters were placed in the landfill and then covered.

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environmental and recreational benefits. The agreement represents real money being used to do real projects in the immediate future and it will help us to move ahead with future agreements to achieve the cleanup of the Fox River, which remains DNR's top priority."

Meyer continued, "Nationwide, negotiation instead of litigation is the norm for settling NRD claims. The DNR feels that we can better serve the interests of the people of Wisconsin by negotiating fair and timely settlements rather than spending years and millions of dollars in court."

Terms of the agreement call for Fort James, now part of Georgia-Pacific Corporation, to fund a number of restoration projects in the Green Bay area. There are three categories of projects involved in the agreement: land purchase, environmental restoration, and recreational projects.

The land purchase involves approximately 700 acres of valuable and highly desirable land purchased by Fort James and turned over to the State of Wisconsin. The state had been interested in acquiring this land for some time, but it was not available. The properties, which will be protected from future development, will be used to enhance and protect wetland and woodland wildlife areas, feeding habitats, and fish spawning beds.

The environmental restoration projects consist of:

- Funding the design and construction of a 30-acre island, part of the Cat Island chain, to be constructed in Green Bay by the U.S. Army Corps of Engineers. The Cat Island chain, which serves as barrier islands protecting the shoreline of the bay near the mouth of the Fox River, has been eroded over the past 30 years. Restoration of the chain will provide nesting habitat for terns and other water birds, habitats for fish and waterfowl and establishment of aquatic plant beds.
- Funding to the DNR for expansion of the Wild Rose Fish Hatchery. This expansion and added funding will enable the hatchery to significantly increase its capability for raising spotted muskies, some of which are stocked in Green Bay and its tributaries.

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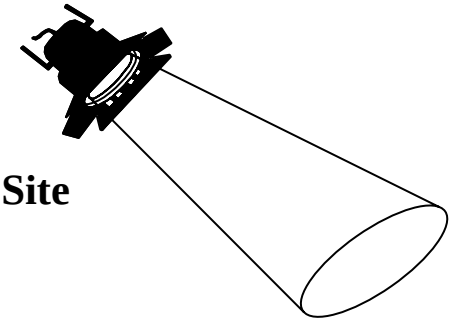
In response to reader requests, the Fox River Current will regularly feature other river projects similar to the Lower Fox River.

Spotlight On:



Allied Paper, Inc./Portage Creek/Kalamazoo River Site

By Susan Pastor, U.S. Environmental Protection Agency

With the polychlorinated biphenyl (PCB) contamination of the Lower Fox River, the U.S. Environmental Protection Agency (EPA) and its intergovernmental partners seem to have their hands full. However, the western side of Lake Michigan is not the only place with a PCB problem. Michigan residents on the eastern side of the lake share similar concerns with their Wisconsin neighbors.

Portage Creek/Bryant Mill Pond in August 1999 after the cleanup was complete. Approximately 150,000 cubic yards of contaminated sediment were removed from the creekbed and floodplain areas.

The Allied Paper, Inc./Portage Creek/ Kalamazoo River site includes 80 miles of the Kalamazoo River in southwestern Michigan. Portions of the river's sediment are contaminated with PCBs from Allied Paper's Bryant Mill facility's operations. From the mid 1950s to 1971, Allied paper "de-inked" carbonless copy paper for recycling. Because the carbonless copy paper contained PCB-laden dyes, the process resulted in the release of PCBs into Portage Creek, downstream into the Kalamazoo River and finally into Lake Michigan. The State of Michigan placed a fishing advisory on the river in 1977 due to high levels of PCBs in fish.

The site was placed on EPA's National Priorities List in 1990 with the Michigan Department of Environmental Quality (MDEQ) designated as the lead agency. Although MDEQ has been responsible for overseeing investigation and cleanup activities, EPA became actively involved in 1997 when MDEQ requested EPA's assistance to clean up the Bryant Mill Pond portion of the site. The 22-acre mill pond was formed when Allied Paper built the Alcott Street Dam in Portage Creek. During mill operations, treated and untreated wastewater containing residual paper pulp waste was directly discharged into Portage Creek. After the dam was no longer used, PCB-contaminated paper pulp waste, soil, and sediment were eventually exposed in floodplain areas up to 300 feet wide.

EPA decided that an interim cleanup, similar to that done at the Lower Fox River's Sediment Management Unit (SMU) 56/57 project, was in order. As with SMU 56/57, EPA reached an agreement with a company to do the $7.5 million cleanup. In this case, Allied Paper would pay for the dredging and excavation of contaminated sediment.

Between October 1998 and May 1999, about 150,000 cubic yards of PCB-contaminated sediment were removed from the creekbed and floodplain areas while Portage Creek was temporarily diverted. Originally, an estimated 90,000 cubic yards were to be removed, however, as the dredging progressed, additional contaminated material was discovered. "The contamination was deeper than the original samples indicated," EPA Remedial Project Manager Jim Hahnenberg said. "We could visually determine the contamination because it was a blue-gray paper pulp color. It was pretty obvious."

Once removed, the sediment was placed in on-site lagoons formerly used by Allied during its years of operation. According to Hahnenberg, the success rate was "even better" than that achieved at the Fox River's SMU 56/57. "The cleanup goal was 10 parts per million (ppm), but a

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- Funding for projects to improve overall water quality in Green Bay and the lower Fox River. Examples would be projects designed to preserve and restore northern pike spawning habitats along the western shore of Green Bay.

The recreational projects will provide expanded recreational opportunities for nearly everyone who uses northeastern Wisconsin's parks, rivers, lakes, and streams. The individual projects include:

- A hiking trail, wooden fishing pier, and car-top boat launch and 10-car parking lot at Joliet Park.
- A hiking trail and picnic area at Bay Beach Parkway.
- A hiking trail at Ken Euers Nature Area.
- A hiking trail at Beaver Dam Creek Parkway.
- A nature center and hiking trail at Ashwaubomay Park.
- A boat launch and 10-car parking lot at Bylsby Avenue boat launch.
- A fishing pier and observation deck, along with a picnic area, at the existing fishing pier at Metro Boat Launch.
- A hiking trail and parking lots at Barkhausen Waterfowl Preserve and Fort Howard Paper Foundation Wildlife Area.
- Hiking trails, parking lots, and picnic areas at parks in the Village of Howard.

A DNR 60-day public comment period on the agreement began on December 20 and concludes on February 21. After public comments have been received and reviewed and incorporated into the agreement, DNR will submit the agreement to the federal court for final approval.

Out and About...

By Susan Pastor, U.S. Environmental Protection Agency

The Fox River Intergovernmental Partnership, made up of the U.S. Environmental Protection Agency (EPA), Wisconsin Department of Natural Resources (DNR), U.S. Fish and Wildlife Service (FWS), National Oceanic and Atmospheric Administration (NOAA), Oneida Tribe of Indians of Wisconsin and Menominee Indian Tribe of Wisconsin, regularly provides speakers to organizations in the Fox Valley area. The following partners recently made presentations:

November

- *Greg Hill,* DNR: Fox Valley Chapters of the League of Women Voters; Neenah; remediation, cleanup goals and costs.
- *George Boronow,* DNR: Lake Michigan Commercial Fishing Board, Michicot; cleanup process, Remedial Investigation/Risk Assessment/Feasibility Study and Natural Resources Damage Assessments.
- *David Allen,* FWS: University of Wisconsin environmental class, Green Bay; Natural Resources Damage Assessment.

December

- *Jim Hahnenberg* and *Sam Borries,* EPA: University of Wisconsin environmental law class, Green Bay; Lower Fox River PCB contamination.
- *Jim Hahnenberg,* EPA: Weyauwega-Fremont Middle School science class, Weyauwega; Lower Fox River PCB contamination and possible cleanup options.

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minimum goal of 1 ppm was better," he explained. "We actually averaged .46 ppm because virtually all of the samples were below 1 ppm."

An estimated 21,000 pounds of PCBs were removed from the streambed and floodplain soil. Additionally, about 7.5 million gallons of contaminated water were treated via an on-site carbon filtration system and then discharged to the city's wastewater treatment facility.

EPA temporarily contained the contaminated material in the lagoons. Since then, Allied Paper began a project to permanently cap the lagoons, under MDEQ supervision. The company also placed sheet piling along Portage Creek to separate the lagoons from the creek.

For more information on the Allied Paper, Inc./Portage Creek/Kalamazoo River site, contact Jim Hahnenberg at (312) 353-4213, Beth Reiner at (312) 353-6576, or refer to the Region 5 homepage at: http://www.epa.gov/region5.

Profile On . . . Greg Hill

Rocks to Dirt to Water Quality

By Rich Trotto, Wisconsin Department of Natural Resources

Greg Hill has been involved with the effects of pollutants in the environment ever since his graduation from the University of Wisconsin (U.W.), Madison in 1974. From his first job at the Dane County Soil and Water Conservation District, through a 20-plus-year career with the Wisconsin Department of Natural Resources (DNR), Hill has been deeply involved in a process that has yielded vast improvement in Wisconsin's waters and the natural resources that depend on those waters.

Hill, the coordinator of the state's Natural Resource Damage Assessment (NRDA) for the Lower Fox River, would like to see that improvement continue, particularly as it pertains to the Fox River and Green Bay.

"I believe we have to work with the responsible parties that will achieve the cleanup of the river. The cleanup of the polychlorinated biphenyl (PCB)-contaminated sediment in the system is the highest priority expressed by the public," says Hill, noting that cleaning up the river is the best way to ensure the future health of the natural resources of the area.

"Then, through the NRDA, we can look to provide some level of compensation for the injuries that have been done in the past," he says, explaining that, since the state is heavily involved in the cleanup process, "We have the role of balancing these two program components."

Hill learned the value of negotiation rather than litigation during his five-year tenure as a ground water specialist in the DNR's Industrial Waste program. There, he helped to implement new water quality toxic rules through the issuance of discharge permits.

His duties included permitting and evaluating industrial land disposal systems and permitting of pulp and paper mills along the Wisconsin and Peshtigo Rivers. "Dioxin was a concern," says Hill, who helped plants work to reduce the amount of chlorine used in their processes. "This, in turn, greatly reduced the amount of dioxin in their wastewater treatment plant sludge, which is otherwise a valuable addition to soil when landspread on agricultural land," he added.

Greg Hill

"These were some of the first plants in the country to voluntarily comply with permit conditions, reduce their dioxin levels to below detectable concentration and to stay out of court," says Hill. "It taught us that by using good science, and discussing the benefits of complying, we could get the companies to comply without the need for litigation."

Hill contends he was recruited for his Fox River duties by walking past an open door. "They were discussing the project when someone looked up and saw me and said, 'Hey Hill, you have some time. How would you like to work on the NRDA?'"

One suspects there was a little more to it than that. Hill was already working on Great Lakes issues including PCBs. "We identified early on that to deal with the concerns of toxins in the Great Lakes, the issue of contaminated sediments needed to be addressed," Hill said.

The Fox River/Green Bay area was one of the sites identified under U.S.-Canadian agreements for the development of Remedial Action Plans (RAPs). These sites on the Great Lakes were evaluated and plans were developed to restore the natural resources using an

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ecosystem approach. The Green Bay RAP was the first to be completed and included several recommendations relating to contaminated sediment and PCB contamination. Hill says that one of the first recommendations to be implemented was to initiate further studies and modeling, which began in earnest in 1989. Modeling uses a computer to make forecasts about future movement of toxins through the ecosystem and foodchain.

Hill now serves as Chief of Water Quality Modeling in the department's Bureau of Watershed Management, a position he probably wasn't contemplating when he was at the U.W. "I have a bachelor's degree in rocks (geology) and a master's degree in dirt (soil science)," Hill recently told a group from the League of Woman Voters whom he addressed regarding cleanup options for the Fox River. Although his expertise is in the restoration area, Hill's ability to explain complex, and often confusing, scientific issues in terms people can understand has made him an effective spokesman for all phases of the Fox River project.

Hill is not only responsible for the Fox River, one of the major focuses of his staff is to develop the state's approach to develop Total Maximum Daily Loads (TMDLs). A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. The allocation of that amount to the pollutant's sources, which could be a farm, factory, or municipality among others, will ultimately have to be implemented, ideally through discussions, and negotiations.

Although not a lifelong Wisconsinite (he was born in the Upper Peninsula of Michigan), Hill has lived in the Madison area since moving here as a young child. His father worked on the Committee on Water Pollution Control, a predecessor of the DNR, where he also regulated discharges to surface and ground water.

Hill is married and a father himself now, with three daughters, two in high school, and one in college who is majoring in neither rocks nor dirt. "She's majoring in Spanish and Sociology, but you never know," he commented. It's probably no surprise that Hill is into fishing (he takes an annual fishing trip to Canada) and gardening. He also likes to cook, and the former U.W. rugby player has also been known to play a mean round of golf in DNR's golf league.

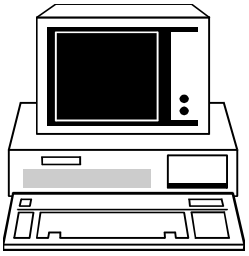
Check out these web sites:

http://www.dnr.state.wi.us/org/water/wm/lowerfox/

http://www.epa.gov/region5/foxriver/

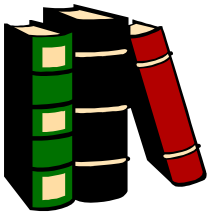
http://www.fws.gov/r9dec/nrdar/nrdamain.html

http://www.fws.gov/r3pao/nrda/



Information Available at Local Libraries

The Intergovernmental Partners invite the public to review technical reports, fact sheets and other documents related to the Lower Fox River cleanup at information repositories set up in the reference sections of the following local libraries. Information repositories at the public libraries in DePere, Kaukauna, Little Chute, Neenah, and Wrightstown have been discontinued. However, binders containing fact sheets will be mailed to and maintained at these locations as well as at the repositories listed below.



- **Appleton Public Library**, 225 N. Oneida St., Appleton, WI; 920-832-6170
- **Brown County Library**, 515 Pine St., Green Bay, WI; 920-448-4381, ext. 394
- **Door County Library**, 104 S. Fourth Ave., Sturgeon Bay, WI; 920-743-6578
- **Oneida Community Library**, 201 Elm St., Oneida, WI; 920-869-2210
- **Oshkosh Public Library**, 106 Washington Ave., Oshkosh, WI; 920-236-5200

An Administrative Record, which contains detailed information upon which the selection of the SMU 56/57 removal action and final site cleanup plan will be based, is also available for review at the Appleton and Brown County Libraries.

Prepared by the Fox River Intergovernmental Partnership: Wisconsin Department of Natural Resources, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Menominee Indian Tribe of Wisconsin, Oneida Tribe of Indians of Wisconsin, and National Oceanic and Atmospheric Administration. Supporting agencies include the Wisconsin Department of Health and Family Services, the U.S. Agency for Toxic Substances and Disease Registry, and the U.S. Army Corps of Engineers.

Disclaimer: The opinions expressed in these articles are solely those of the authors and are not necessarily shared by all members of the Fox River Intergovernmental Partnership.

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Fox River Current is published bimonthly by the Fox River Intergovernmental Partnership. Its purpose is to provide up-to-date information about cleanup and restoration efforts on the Lower Fox River. Call Greg Swanson at (608) 264-6024 to request a subscription or alternative format. Feedback on articles and ideas for future issues are welcome. Send comments to Greg Swanson, *Fox River Current*, DNR, CE/6, P.O. Box 7921, Madison, WI 53707 or email <swansg@dnr.state.wi.us>